California Regional Water Quality Control Board
San Francisco Bay Region

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Commanding Officer
Department of the Navy, Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190
Attention: Ms. Ellen M. Casados

Subject: Comments Regarding Draft Field Sampling Plan and Draft Quality Assurance Project Plan for Facility-Wide Ground Water Monitoring at Naval Station Treasure Island, San Francisco, California

Dear Ms. Casados:

Regional Board staff (Board staff) has reviewed the Draft Field Sampling Plan (FSP) and Draft Quality Assurance Project Plan (QAPP) for Facility-Wide Ground Water Monitoring at Naval Station Treasure Island. The two draft plans were received in this office on February 11, 2000. Board staff also met with you, the California Department of Toxic Substances Control, and your consultant, TetraTech EMI, on March 2, 2000 to discuss the plans. Based on our review of the plans and our meeting discussions, Board staff has the following comments. These comments have been reviewed by and coordinated with the California Department of Toxic Substances Control (DTSC).

Data Quality Objectives

Figure A-3 of the draft QAPP is a flow chart for decision rules developed in accordance with data quality objectives (DQOs) for the ground water sampling project. However, as discussed in detail at the above-referenced meeting, the decision rules in the flow chart are structured for making remedial decisions rather then for making ground water monitoring decisions. For example, the flow chart indicates when a site may be closed based on ground water analytical data. Decision rules that discuss site closure are beyond the scope of this periodic ground water monitoring program.

Board staff believes that one of the main reasons that the flow chart goes beyond the scope of the ground water monitoring effort is that the Problem Statement, Decisions, and Decision Rules identified in Steps One, Two and Five of the DQOs are too broad for the project. For example, the Problem Statement described on page 6 of the QAPP is "...ground water sites located at Naval Station Treasure Island may be contaminated and impacting aquatic life in San Francisco Bay." The problem statement should instead be simply that periodic ground water monitoring data is necessary to fill data gaps and provide a comprehensive database to assist in making future remedial decisions. The Decisions and Decision Rules should then focus only on what data may be required to fill these data gaps.

This change to the QAPP is critical because the Navy and the agencies have yet to develop consensus regarding remedial decisions for ground water sites at Naval Station Treasure Island. For example, Board staff has not formally concurred with the concept of shoreline protection zone for all of Treasure Island as referenced on page 8 of the QAPP. There is concurrence that additional ground water monitoring data should be collected to fill data gaps. Based on discussions during our above-referenced meeting, Board staff understands that the Navy will modify the QAPP accordingly. For example, Figure A-3 and the associated Decision Rules in Step Five of the DQO process will be modified to eliminate all remedial decision end points.

Detection Limits

Table 2-1 in Appendix Two of the QAPP lists the analytical methods proposed for various ground water constituents of concern. Board staff has previously expressed a concern that USEPA ambient water quality criteria (AWQC) for human consumption of fish are consistently less then detection limits previously used at Treasure Island. The primary chemicals of concern with low AWQC are select semi-volatile organics (SVOCs), polychlorinated biphenyls (PCBs), and mercury. Table 2-1 indicates that SVOCs, PCBs, and metals will be sampled using "low level" analytical methods. However, the exact detection limits are not provided in the table. We recommend that the Navy review the appropriate AWQC and select analytical methods that provide detection limits equal to or below the AWQC. The laboratory method detection limits (MDLs) and practical quantitation limits (PQLs) should be provided in the QAPP. If standard analytical methods are not available to ensure MDLs will be equal to or less than AWQC, then the lowest detection limit possible should be used and justified in the QAPP.

Underground Storage Tank (UST) Sites

We understand that the QAPP and FSP do not address periodic ground water sampling for UST sites. Ground water sampling at UST sites will be addressed in a separate plan.

Field Sampling Procedures

The following page-specific comments relate to sampling procedures outlined in the FSP.

Page 5 – language regarding low tide sampling should be modified to clearly indicate that all sampling will be conducted within a 3-hour period at *or after* low tide.

Page 5 – the FSP proposes collection of dissolved oxygen (DO) at multiple depths within a well using a down-well probe prior to sampling. An object submersed in a well will immediately disturb the water column, and field-sampling results will likely be inaccurate unless the well is allowed to stabilize for several hours prior to data collection. Because the probe data collection technique is not conducive to a long period of water column stabilization, we are doubtful that the data collected as proposed will be fully representative of DO concentrations over a vertical profile in the well.

Page 6 – the draft FSP proposes that in cases where field parameters do not stabilize after extraction of three well volumes, then ground water samples will be collected after a fourth well volume is removed. We do not concur that ground water samples should be collected without stabilization of field parameters. If field parameters do not stabilize, then efforts should be made to understand why stabilization is not occurring. For example, the well may need to be redeveloped prior to sampling.

Page 6 – the draft FSP proposes that wells with low recovery rates that pump dry during purging will be sampled after the well has fully recovered. We do not concur that low recovery wells should be sampled without stabilization of field parameters. Efforts should be made to extract ground water during the purging effort at low rates to prevent these wells from being pumped dry. Considering the nature of sediments at Treasure Island, it is doubtful that significant low permeability zones exist that would result in wells being pumped dry if caution is taken during purging to prevent such conditions.

Page 6 – the FSP should be clear that pumps used for well purging will be set in the middle of the well screen.

Page 7 – the FSP should be clear that ground water samples for metals will be preserved in the field after filtering.

Page 7 – the FSP should be clear that the four proposed ground water samples collected for stabilization of field parameters using the flow-through cell will be collected at even time intervals during the sampling effort.

Page 8 – the FSP should be clear that the well pump will be set in the middle of the well screen during use of the flow-through cell.

Page 11 –the FSP proposes that Investigation Derived Waste (IDW) will be disposed of in accordance with State and federal regulations. Based on discussions during our meeting, we understand that purge water will be transported to the wastewater treatment plant (WWTP) at Treasure Island provided that the chemical concentrations in the purge water are acceptable to the WWTP. It is unclear what requirements the WWTP is implementing for acceptance of purge water. The FSP should discuss what criteria is being used to determine when purge water can be transported to the WWTP and when the purge water will be hauled to an off-site disposal facility.

Selection of Wells and Constituents of Concern

Table 4-1 of the FSP proposes wells and constituents of concern (COCs) for sampling and laboratory analysis for each of the Remedial Investigation (RI) and Corrective Action Plan (CAP) sites. The following provides Board staff's requested changes to the proposed sampling plan. Contaminant concentrations that were evaluated by Board staff as part of the justification

for requested changes are the maximum concentrations detected for the respective RI or CAP site during the 1998 annual ground water monitoring event. The following is a brief summary of our justification for changes:

- In cases where SVOCs, PCBs, and/or dissolved and filtered mercury were detected in source areas or near the shoreline, we are requesting additional sampling to assess these contaminants using lower detection limits consistent with the USEPA AWQC for these COCs.

- In cases where unfiltered metals concentrations exceeded AWQC and filtered metals data has not been collected from this area, we are requesting additional filtered metals data.

- In cases where VOCs were detected at elevated concentrations, we are requesting that wells with previous detections and shoreline wells be sampled for these parameters.

- In cases where MTBE was detected, we are requesting that each well with a previous detection be re-sampled for MTBE.

- All new wells should have a full suite of analysis including VOCs, SVOCs, PCBs, and dissolved metals.

- In cases where dissolved and filtered arsenic appears to potentially be collocated with petroleum constituents, we are requesting re-sampling for dissolved and filtered arsenic at all petroleum source wells and shoreline wells.

The following is a list of our recommended changes. Board staff may have overlooked changes for one or more wells or COCs that would be consistent with our above described rationale. We suggest that the Navy review this list of requested changes and ensure that changes are made throughout the FSP and QAPP to be consistent with our above-described justification.

IR Site 01

Add well 01-MW01 to the sampling program. COCs for this well should be dissolved and filtered metals.

IR Site 5/17

Add wells 17-MW01 and 24-MW03 to the sampling program. COCs for these wells should be total petroleum hydrocarbons as diesel (TPH-d), TPH as gasoline (TPH-g), TPH as motor oil (TPH-mo), VOCs, SVOCs, and dissolved metals.

CAP Site 06

Add Volatile Organic Compounds, Semi-Volatile Organic Compounds (SVOCs), and methyl-t-butyl ether (MTBE) for select wells where these contaminants were previously detected, and VOCs and SVOCs for all wells near the shoreline.

IR Site 12

Add VOCs and SVOCs for wells MW-5, 6, and 7.
Add SVOCs, PCBs, and dissolved metals for wells MW-20, 21, 22, 23, and 24.

CAP Site 14/22

Add SVOCs and MTBE for all wells where these contaminants were previously detected, dissolved and filtered arsenic for all wells, and SVOCs for all shoreline wells.

CAP Site 15

Add Monitored Natural Attenuation (MNA) parameters for well MW-3.

CAP Site 25

Add VOCs, SVOCs, and dissolved and filtered lead and arsenic for all wells with previous detections above AWQC and all shoreline wells. Add MTBE for all wells with previous detections.

Bladder Pumps

Although not proposed in the QAPP and FSP, Board staff understands that the Navy is considering the use of dedicated bladder pumps for low flow well purging and sampling. Board staff supports the use of bladder pumps for low flow sampling provided that the sampling procedure can provide accurate and consistent water quality data. Of specific concern with any low flow dedicated pump is fluctuating water levels that could result in the pump being set at a drastically different water level for each sampling event. Also of concern is the use of dedicated low flow sampling pumps for petroleum constituents because the sampling interval must be in the upper few feet of the water column for each sampling event. We suggest that the Navy closely evaluate historical water level data prior to selecting and installing bladder pumps in wells. We understand that, if used as a sampling method, the Navy will be providing an addendum to the FSP and QAPP for bladder pumps and low flow sampling procedures.

Closing

These comments should be consistent with discussions during our meeting on March 3, 2000. The schedule presented in Table 8-1 of the FSP indicates that the Navy intends to be in the field for the first quarter sampling event in June 2000. However, we understood from our meeting discussions that the Navy now intends to implement the first quarter sampling event in March 2000. If any of these comments require resolution before the Navy implements the first quarterly event, including our comments regarding the use of dedicated bladder pumps, please contact our office as soon possible to discuss these comments and resolve issues prior to data collection.

If you have questions regarding these comments, please feel free to call me at (510) 622-2377.

Sincerely,

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